

Title (en)
HEATING DEVICE

Title (de)
HEIZVORRICHTUNG

Title (fr)
DISPOSITIF DE CHAUFFAGE

Publication
EP 2768276 B1 20160928 (EN)

Application
EP 12839896 A 20120824

Priority
• JP 2011224286 A 20111011
• JP 2012071378 W 20120824

Abstract (en)
[origin: EP2768276A1] A heating device (1) has a heating element (10) capable of generating heat energy when receiving an electric power, and a power supply control module (20) for performing a power supply so that a plug resistance value R GP of the heating element becomes equal to a target resistance value R TRG . The heating element and the electric power supply control module are accommodated together in a housing casing (30) of a cylinder-like shape. The power supply control device (20) has a reference resistance value storage means (231) for storing a resistance value of the heating device, as a reference resistance value R C , at a predetermined target temperature T TRG , a resistance value change reflecting means (233) and a deterioration judgment means (234). The resistance value change reflecting means (233) allows the power supply to the heating element (10) when the plug resistance value R GP of the heating element (10) is lower than the reference resistance value R C during the power supply to the heating element (10), and halts the power supply to the heating element (10) when the plug resistance value R GP of the heating element (10) exceeds the reference resistance value R C during the power supply to the heating element (10) in order to reflect, to the power supply control, the resistance value change due to the temperature change of the heating element (10). The deterioration judgment means (234) judges whether or not the heating element (10) is deteriorated by using a deterioration power value P WRN in a deterioration state, as a power threshold value P REF , calculated by multiplying an initial reference power value P INT with a predetermined rate.

IPC 8 full level
H05B 3/00 (2006.01); **F02M 31/125** (2006.01); **F02P 19/02** (2006.01); **F23Q 7/00** (2006.01); **H05B 1/02** (2006.01)

CPC (source: EP)
F02P 19/021 (2013.01); **F02P 19/027** (2013.01); **F23Q 7/001** (2013.01); **H05B 1/0236** (2013.01); **F02P 19/022** (2013.01); **F02P 19/023** (2013.01); **F02P 19/025** (2013.01); **H05B 2203/02** (2013.01); **H05B 2203/027** (2013.01)

Cited by
EP2653714A4; WO2017140783A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 2768276 A1 20140820; EP 2768276 A4 20150701; EP 2768276 B1 20160928; CN 103875308 A 20140618; CN 103875308 B 20160323; JP 2013084478 A 20130509; JP 5884390 B2 20160315; WO 2013054598 A1 20130418

DOCDB simple family (application)
EP 12839896 A 20120824; CN 201280049575 A 20120824; JP 2011224286 A 20111011; JP 2012071378 W 20120824